

**County of Loudoun**  
**Office of Transportation Services**  
**MEMORANDUM**



**DATE:** April 17, 2009

**TO:** Stephen Gardner, Project Manager  
Department of Planning

**FROM:** Lou Mosurak, AICP, Senior Transportation Planner *LM*

**SUBJECT:** ZMAP 2006-0011, ZCPA 2006-0003—Stone Ridge Commercial  
Second Referral

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**Background**

This referral reviews the revised rezoning (ZMAP) and concept plan amendment (ZCPA) applications for portions of the approved Stone Ridge development. The referral also updates the status of the transportation issues identified in the first OTS referral on the initial applications (dated October 10, 2006).

The subject ZMAP application proposes to rezone approximately 50 acres from the PD-H4, R-24, and PD-IP zoning districts to the PD-H4, R-16, PD-OP, and CLI zoning districts; these changes would result in a net increase of approximately 2,424 sq ft of non-residential (office) uses within Stone Ridge. A summary of these proposed land use changes is provided as *Attachment 1*. Additional residential uses are no longer proposed. With respect to the road network, the subject ZCPA application proposes to realign segments of South Point Drive (formerly Canary Grass Drive) to connect with Gum Spring Road (Existing Route 659), creating a continuous connection for local traffic between Millstream Drive and the West Spine Road without the need to access U.S. Route 50. Additionally, Millstream Drive (west of Stone Springs Boulevard) is proposed to be realigned to serve Landbay 7, connecting to Tall Cedars Parkway west of the proposed residential areas and will eliminate the need for a major floodplain crossing. A vicinity map and reduced version of the concept development plan are provided as *Attachment 2*. Access to the site is largely via the existing Stone Ridge internal road network. It is noted that Landbay 9, located north of the South Fork of Broad Run, would be accessed via U.S. Route 50 opposite a new at grade intersection approved with the INOVA Dulles South Hospital Campus in February 2008.

This referral is based on review of materials received from the Department of Planning on February 12, 2009, including (1) a letter from the Applicant dated January 27, 2009 responding to first referral comments; (2) a revised statement of justification prepared by the Applicant dated January 27, 2009; (3) a draft proffer statement, dated January 27, 2009; (4) a traffic impact study update prepared by Wells & Associates, LLC, dated January 26, 2009; and (5) a rezoning plan set (including a concept development plan (CDP)) prepared by Urban, Ltd., dated April 7, 2006 and revised through January 27, 2009. OTS staff also

reviewed (6) the proffers and letter of clarification, dated October 5, 2005 and November 30, 2005, respectively, for the most-recently approved Stone Ridge rezoning application (ZMAP 2002-0013).

### **Existing, Planned and Programmed Transportation Facilities**

Per the 2001 Revised General Plan, the portion of the subject property located east of future Route 659 Relocated is located within the Suburban Policy Area (Dulles Community), while the portion of the site to the west of future Route 659 Relocated is located in the Transition Policy Area.

Major transportation facilities serving or planned to serve the site and surrounding area are described below. References to the 2001 Revised Countywide Transportation Plan (2001 Revised CTP) are taken from CTP Appendix 1 (Design Guidelines for Major Roadways).

**John Mosby Highway (U.S. Route 50)** (from approximately 1 ¼ miles west of this site to Loudoun County Parkway) is currently a four-lane median divided minor arterial with controlled access. The 2001 Revised CTP designates the ultimate condition of this segment of Route 50 (east of Route 659 Relocated) as a six-lane divided (R6M) limited access principal arterial. Grade-separated interchanges are planned at Route 659 Relocated (west of this site) and at the West Spine Road and Loudoun County Parkway (both east of this site). All at-grade access is ultimately planned to be terminated. At the present time, a third eastbound lane, constructed by Stone Ridge, is in place from the South Fork of Broad Run east to just prior to the Gum Spring Road intersection; per previous proffered commitments (ZMAP 2002-0013), Stone Ridge is obligated to continue construction of the third Route 50 eastbound lane east to Loudoun County Parkway. Various other rezoning applications approved in 2006 and 2007 (i.e., Dulles Landing, Arcola Center, Glascock Field) have proffered to construct improvements that would ultimately result in a continuous third Route 50 westbound lane between Loudoun County Parkway and Stone Springs Boulevard. INOVA Hospital, as part of its 2008 special exception approval, is obligated to construct a third Route 50 westbound lane across its frontage (west of the South Fork of Broad Run), as well as to construct a full median crossover at its Route 50 entrance (INOVA Boulevard) with signalization when warranted.

**Tall Cedars Parkway** is the Route 50 South Collector Road. It is classified as a major collector by the 2001 Revised CTP and is currently constructed to its interim four-lane divided (U4M) condition within Stone Ridge, from Gum Spring Road (Existing Route 659) west to the new Arcola Elementary School. East of future Route 659 Relocated, Tall Cedars Parkway is ultimately planned to be widened to a six-lane divided (U6M) section and continue east through South Riding (incorporating existing segments of the roadway) and connecting with Route 50 at a grade-separated interchange in the vicinity of Willard Road.

**Stone Springs Boulevard** is a four-lane divided (U4M) local road which functions as the main north-south road through Stone Ridge. Signalization is in place at the Route 50 intersection. As part of the Glascock Field rezoning application approved in 2007, Stone Springs Boulevard will be extended north of Route 50 and tie into existing Gum Spring Road in the vicinity of Dulles South Parkway (the Route 50 North Collector Road). Modifications to

the traffic signal and turn lanes at the Route 50/Stone Springs Boulevard intersection were proffered as part of the approved Glascock Field application. It is noted that at such time as Route 50 becomes limited access with interchanges in operation at Route 659 Relocated (Northstar Boulevard) and the West Spine Road, all other at-grade access, including Stone Springs Boulevard, is planned to be terminated.

**Gum Spring Road (Existing Route 659)** is currently a two-lane undivided (R2) roadway. Ultimately, the **2001 Revised CTP** envisions the segment of Gum Spring Road between Tall Cedars Parkway and the Route 50 North Collector Road (south of Arcola) to be closed once alternate road connections are in place (e.g., the West Spine Road to the east and Stone Springs Boulevard Extended to the west). As part of the 2007 approval of the Glascock Field rezoning application, the segment of Gum Spring Road north of Route 50 will be realigned to form a T-intersection with Stone Springs Boulevard Extended.

**West Spine Road (also referred to as Route 606 Extended)** is a planned new roadway corridor which will run between the existing Route 606 corridor (at the future intersection with Loudoun County Parkway) south to Route 50 (at a point approximately 1,000 feet east of the existing Route 50/Gum Spring Road intersection), and continuing south to join the present alignment of Gum Spring Road at Tall Cedars Parkway. South of this point, the West Spine Road will follow the alignment of Gum Spring Road south to Braddock Road and Prince William County. The **2001 Revised CTP** calls for the West Spine Road to ultimately be a six-lane divided (U6M) major collector from existing Route 606 south to Braddock Road, though interim construction as a four-lane divided (U4M) facility will likely be in place for some time. A grade-separated interchange is planned at Route 50. At present, no construction of the West Spine Road has commenced north of Route 50. South of Route 50, a half-section (two lanes) of the West Spine Road have been constructed, but are not yet open to traffic. Construction of the remaining two lanes between Route 50 and Tall Cedars Parkway has been committed to by private sector proffer, though all necessary right-of-way has not been acquired. Between Tall Cedars Parkway and Braddock Road, Existing Route 659/West Spine Road is currently being expanded under a private sector proffer to a four-lane divided (U4M) facility.

**Millstream Drive** is a four-lane undivided (U4) local road within Stone Ridge, located north of Tall Cedars Parkway and south of Route 50. It currently forms a partial loop, intersecting with Tall Cedars Parkway both east and west of Stone Springs Boulevard. The subject applications propose to realign the western segment of existing Millstream Drive, resulting in the roadway intersecting Tall Cedars Parkway further to the west (west of the power lines). An unbuilt segment of Millstream Drive (proffered as part of a previous Stone Ridge rezoning (ZMAP 2002-0013) approved in 2005) that would have extended the roadway west to Route 659 Relocated is proposed to be eliminated, avoiding the need for a major floodplain crossing of the South Fork of the Broad Run.

**South Point Drive** is an existing two-lane (U2) local road which provides access to the Gum Spring Village Center development on the east side of Gum Spring Road; South Point Drive is proposed to be extended further to the east (to the future West Spine Road) by the pending West Spine Plaza application (SPEX 2007-0029). The subject Stone Ridge applications propose to extend South Point Drive west of Gum Spring Road and connect with Millstream

Drive, creating a road connection that would provide local access between Stone Ridge, Gum Spring Village Center, and West Spine Plaza without reliance on Route 50.

**Route 659 Relocated** (also referred to as **Northstar Boulevard**) is a planned new roadway corridor that would run from Existing Route 659 (Belmont Ridge Road) in the Brambleton development south to Route 50, continuing south to connect with the future Route 234 Bypass in Prince William County. The **2001 Revised CTP** calls for Route 659 Relocated to ultimately be a six-lane divided (U6M) minor arterial with controlled access. A grade-separated interchange is planned at Route 50. The most recent previous Stone Ridge application (ZMAP 2002-0013) provided an on-site right-of-way reservation for the reserved ultimate condition of this future roadway, and the current application is proposing to construct a two-lane section of the road from Tall Cedars Parkway to the southern Stone Ridge property line.

**Dulles South Park & Ride Lot** is a 250-space commuter parking lot located within the Stone Ridge Village Center shopping center, along the north side of Millstream Drive. Loudoun County Transit operates weekday peak hour commuter bus service from this lot to the Dulles North Transit Center, Rosslyn, the Pentagon and numerous points in downtown Washington, DC. This lot, which opened in 2006, was proffered by Stone Ridge as part of a previous rezoning (ZMAP 1994-0017) approved in 1995.

### **Review of Applicant's Revised Traffic Study**

The Applicant's traffic study update (dated January 26, 2009) reflects the overall development program proposed with these applications, including the net increase of 2,424 sq ft of office uses within Stone Ridge. The study assumes site buildout in a single phase by 2015 and includes updated (2008) traffic counts at eight (8) existing intersections. Relevant portions of the revised traffic study are summarized below.

### **Road Network Analyzed by Revised Study**

The Applicant's traffic study update analyzed current and future traffic conditions, focusing on eight (8) existing intersections and adjacent roadway segments in and around Stone Ridge. Future road segments and intersections are shown as dashed lines on the graphic. Existing lane use and traffic control is illustrated on *Attachment 3*.

### **Existing Traffic Volumes and Intersection Levels of Service (LOS)**

*Attachment 4* illustrates existing daily and peak hour traffic volumes in the vicinity of the subject site. AM and PM peak hour traffic counts were taken at eight (8) intersections in the study area in 2008. Daily traffic volumes (VPD) shown on *Attachment 4* were estimated based on the assumption that PM peak hour traffic volumes represent 10% of daily traffic volumes.

*Attachment 5 (Column 1)* summarizes existing intersection LOS in the vicinity of the site. Under existing signalized control, both the Route 50/Stone Springs Boulevard intersection (Intersection 3) and the Route 50/Route 659 intersection (Intersection 4) operate at an overall unacceptable LOS in the AM peak hour, though certain individual movements at each

intersection operate at unacceptable LOS in the PM peak hour. The Route 50/Loudoun County Parkway intersection (Intersection 6) operates at overall unacceptable LOS conditions in both the AM and PM peak hours with existing signalization.

### **Background Traffic Assumptions**

The traffic study update includes background traffic from a total of 19 pending and/or approved developments in the surrounding area. The study assumes a 2% annual growth rate, which was applied to all turning movements for forecast year (2015) conditions. The study states that this rate was determined based on recent conversations with VDOT; OTS staff notes that the same growth rate was used in the December 2008 traffic study for the adjacent West Spine Plaza application (SPEX 2007-0029).

### **Trip Generation from Proposed Development**

The proposed applications would result in approximately 331 additional weekday average daily trips (a 1% increase) beyond those generated by the currently approved Stone Ridge development program. This figure includes 71 additional AM peak hour trips (3% increase) and 38 additional PM peak hour trips (1% increase). These figures are illustrated on the trip generation comparison included as *Attachment 6*, and reflect adjustments in standard trip generation rates for (1) internal capture; (2) transportation demand management (TDM) measures, and (3) pass-by trips for approved retail uses, all based on previous Stone Ridge traffic studies and approvals. The traffic study notes that “the proposed development program would have less impact on the peak hour, peak direction trips since the largest shift in development density is proposed to be to employment uses” (part of Conclusion #3, Page 29). This is evidenced by the figures in *Attachment 6*, which show that a majority of the increased peak hour trips would flow into Stone Ridge in the AM peak and leave Stone Ridge in the PM peak.

### **Forecasted (2015) Traffic Volumes, Levels of Service (LOS), and Recommended Mitigation Measures**

*Attachments 7 & 8* illustrate the 2015 total future traffic volumes (i.e., background traffic plus site-generated traffic) for both the approved and proposed Stone Ridge development programs, respectively. Year 2015 total future peak hour intersection LOS for all 16 intersections in the study area is illustrated on *Attachment 5 (Columns 2 & 3)* for both the approved and proposed development programs, respectively. The total future lane use and traffic control necessary to achieve the peak hour LOS categories identified in *Attachments 7 & 8* are depicted in *Attachments 9 & 10*; lane configuration changes proposed by the subject applications are noted by asterisks.

Significant changes to the regional road network assumed by 2015 include (1) the completion of the West Spine Road between Tall Cedars Parkway and Route 50 (the West Spine Road will replace Gum Spring Road as the through traffic connection south of Route 50); (2) the completion of Stone Springs Boulevard extended north of Route 50; and (3) the conversion Gum Spring Road north of Route 50 to a right-in, right-out only configuration. These configurations are depicted on *Attachment 10*.

In 2015, under both the approved and proposed development programs, the updated traffic study indicates that several movements would operate at failing LOS in both the AM and PM peak hours at the Route 50/Stone Springs Boulevard intersection (Intersection 3) and at the the Route 50/West Spine Road intersection (Intersection 5) (both intersections would be signalized). The signalized Route 50/Loudoun County Parkway intersection (Intersection 6) would continue to operate at overall failing LOS in both the AM and PM peak hours. The on-site intersections of Stone Springs Boulevard/Millstream Drive (Intersection 8) and Stone Springs Boulevard/Tall Cedars Parkway (Intersection 12) would experience significant side street delays (LOS F) as a result of removing stop sign controls currently in place on the through street at each intersection.

The study concludes that the proposed development program would result in similar conditions to those that would be realized under the approved development program, while providing a move favorable local connection between Stone Ridge and the West Spine Road via Southpoint Drive, which would not require access to Route 50.

### **Status of Transportation Issues/Comments**

Staff comments from the first OTS referral (October 10, 2006), as well as the Applicant's responses (quoted directly from the January 27, 2009 Applicant response letter) and issue status, are provided below.

1. Initial Staff Comment (1<sup>st</sup> Referral, October 10, 2006): The application proposes to realign existing Gum Spring Road to create a T-intersection with a local road (Canary Grass Drive) approximately 300 feet south of the existing Gum Spring Road/Route 50 intersection, and proposes to remove the existing traffic signal and median crossover at the intersection of existing Gum Spring Road and Route 50, creating a right-in, right-out scenario to/from eastbound Route 50. This proposed right-in, right-out configuration is not acceptable as it is inconsistent with the adopted Revised Countywide Transportation Plan (Revised CTP), which calls for the ultimate condition of this segment of Route 50 to be limited access with grade separated interchanges at various locations, including the West Spine Road (approximately 1,000 feet to the east of the proposed right-in, right-out movement). The proposed right-in, right-out movement is not only inconsistent with the limited access policy but would also result in weave/merge conflicts with the future Route 50/West Spine Road interchange. A more acceptable configuration would be to extend Canary Grass Drive to tie into the east-west road (Southpoint Boulevard) approved as part of the adjacent Gum Spring Village Center development, with future access to the West Spine Road south of Route 50. The Applicant should coordinate this connection with Gum Spring Village Center.

*Applicant's Response (January 27, 2009): The application provides for the extension of former Canary Grass Drive (now South Point Drive) in the Gum Spring Village Center project. This street configuration is consistent with the eventual closure of the existing Route 659 and Route 50 intersection and median crossover.*

**Issue Status:** OTS appreciates the revised road layout to connect Southpoint Drive from its existing terminus west to Millstream Drive. This connection will

provide beneficial local access between Stone Ridge and the future West Spine Road without the need to access Route 50.

OTS notes that the Route 50/Existing Route 659 (Gum Spring Road) intersection will ultimately be closed, and north-south through traffic will utilize the future West Spine Road. The decision regarding the timing of modifications or closure to the Route 50/Gum Spring Road intersection rests with VDOT as part of a larger operational review/analysis of the road network; the timing and extent of any modifications to this intersection and the Applicant's role/responsibility for any such modifications should be discussed with VDOT. Additionally, it is not clear if Gum Spring Road between Route 50 and Tall Cedars Parkway needs to be retained at all once the West Spine Road is constructed should all adjacent parcels have alternate access in place; further discussion with VDOT and other adjacent property owners is necessary.

2. Initial Staff Comment (1<sup>st</sup> Referral, October 10, 2006): Issues with right-of-way acquisition and construction of the proposed West Spine Road between Tall Cedars Parkway and Route 50 add additional complications and uncertainty to the interim and ultimate roadway configuration in this area. Although construction plans for a two-lane (northbound) section of the West Spine Road between Tall Cedars Parkway and Route 50 were approved by the County in 2002 (CPAP 2001-0184), no construction has commenced to date. No plans are currently on file for the remaining two (southbound) lanes of the West Spine Road between Route 50 and Tall Cedars Parkway. (Construction plans (CPAP-2002-0189) were approved by the County in 2004 for a four-lane section of Gum Spring Road from Tall Cedars Parkway south to Braddock Road, but no construction has commenced to date). It has been anticipated that existing Gum Spring Road and the West Spine Road would operate as a one-way pair of roads until all four lanes of the West Spine Road are completed between Tall Cedars and Route 50, but such a configuration has not been approved by VDOT. All approved construction plans show cul-de-sacs at both ends of the segment of existing Gum Spring Road between Tall Cedars Parkway and Route 50 (as envisioned by the currently-approved Stone Ridge development program and the approved Gum Spring Village Center special exception (SPEX 2003-0033, approved in 2004). Based on the anticipated cul-de-sacs at each end of this segment of Gum Spring Road, Gum Spring Village Center (as required by its SPEX condition of approval) has prepared and submitted to the County a traffic signal warrant study for its Southpoint Boulevard entrance onto Gum Spring Road, approximately 600 feet south of Route 50. The study finds that a traffic signal is not warranted at the proposed intersection. Given the situation with the West Spine Road and the likelihood that existing Gum Spring Road will remain open in its current condition for the foreseeable future, OTS strongly disagrees with this conclusion. Additional discussion and coordination on this matter and the overall status of the West Spine Road are necessary.

Applicant's Response (January 27, 2009): We look forward to a meeting with OTS to discuss these matters.



**Issue Status:** As stated above, OTS appreciates the revised road layout to connect Southpoint Drive from its existing terminus at Gum Spring Road (Intersection 10) west to Millstream Drive. The timing of this connection is not specified in the subject application materials. Should this connection be made prior to the closure of Gum Spring Road south of Route 50, additional turn lanes and signalization would likely be necessary. Subsequent to the resolution of the larger road network issues identified in Comment #1 above, discussion on the timing of the Southpoint Drive connection is needed. OTS staff is available to meet with VDOT and the Applicant to discuss the timing of this connection and its relationship to the larger road network in the area.

3. Initial Staff Comment (1<sup>st</sup> Referral, October 10, 2006): While the Applicant's traffic study indicates that the existing Gum Spring Road/Route 50 signalized intersection operates at LOS E during the AM peak hour, other traffic studies recently submitted to the County (e.g., Arcola Center) indicate that the intersection operates at LOS F during both the AM and PM peak hours. An explanation/clarification of this discrepancy needs to be provided.

Applicant's Response (January 27, 2009): An updated traffic study is included with this submission.

**Issue Status:** OTS appreciates the Applicant's traffic study update and has no further comments on this issue. Issue resolved.

4. Initial Staff Comment (1<sup>st</sup> Referral, October 10, 2006): Proffered improvements to Route 50 committed to as part of the previous Stone Ridge rezoning (ZMAP 2002-0013) should also be included with this proposal as "up front" improvements as the current application is also part of Stone Ridge and would add trips to the Route 50 corridor. These proffers include "up front" construction of the third eastbound lane of Route 50, roughly from Stone Ridge to Loudoun County Parkway (as described in ZMAP 2002-0013, Proffer II.B.3., November 30, 2005 Letter of Clarification), and improvements to the West Spine Road/Route 50 intersection (as described in ZMAP 2002-0013, Proffer II.B.4.(c), October 5, 2005 Proffer Statement).

Applicant's Response (January 27, 2009): The Route 50 improvements proffered with ZMAP 2002-0013 remain in effect and will not be changed by this Application.

**Issue Status:** The Applicant is requested to confirm the approval status of the third Route 50 eastbound lane between the current terminus of the eastbound three-lane section (just west of Gum Spring Road) and the West Spine Road. See also Comment #9 below.

5. Initial Staff Comment (1<sup>st</sup> Referral, October 10, 2006): Given existing and forecasted traffic volumes, grade-separated interchanges are an integral part to long-term transportation solutions in the Route 50 Corridor. Currently, a diamond interchange is



envisioned at intersection of the West Spine Road and Route 50. The Applicant should provide a fair-share contribution towards this future improvement.

*Applicant's Response (January 27, 2009):* *The existing Stone Ridge proffers, Proffer II.I., include a cash contribution commitment for regional transportation improvements. This Application does not change the existing commitment.*

**Issue Status:** See Comment #9 below.

6. Initial Staff Comment (1<sup>st</sup> Referral, October 10, 2006): Staff has no issues with proposed re-alignment of Millstream Drive, provided that the future east-west segment intersects with Route 659 Relocated at a point sufficiently south of the planned interchange of Route 659 Relocated and Route 50.

*Applicant's Response (January 27, 2009):* *Comment acknowledged.*

**Issue Status:** The revised applications no longer propose this roadway alignment, and therefore this comment is no longer applicable. Issue resolved.

7. Initial Staff Comment (1<sup>st</sup> Referral, October 10, 2006): The inclusion of 307 additional residential units as part of this application appears to be a reversal of Board action taken with the previous Stone Ridge rezoning (ZMAP 2002-0013), in which 216 residential units were eliminated and approximately 200,000 sq ft of non-residential uses were instead retained.

*Applicant's Response (January 27, 2009):* *The Application has been revised to relocate previously approved residential units within the Property, but does not request an increase in the number of approved residential units. A modest increase in the amount of non-residential floor area is requested.*

**Issue Status:** The revised applications no longer propose additional residential units beyond previous approvals, and therefore this comment is no longer applicable. Issue resolved.

8. Initial Staff Comment (1<sup>st</sup> Referral, October 10, 2006): An appropriate transit contribution should be provided for the 307 residential units proposed on site.

*Applicant's Response (January 27, 2009):* *As noted above, the revised Application proposes no increase in the number of previously approved residential units.*

**Issue Status:** The revised applications no longer propose additional residential units beyond previous approvals, and therefore this comment is no longer applicable. Issue resolved.

### **New Issues**

After review of the revised application, OTS staff has identified the following additional issues/comments:

9. The Applicant is requested to provide a comparison of the transportation improvements proposed with the subject applications with those improvements proffered as part of previous Stone Ridge approvals.
10. The Applicant should commit to implement/construct the on-site “proffered” and “site” improvements identified in the updated traffic study for the proposed development program (see *Attachment 10*). The study indicates that these improvements are necessary to realize the forecasted peak hour intersection LOS conditions presented.
11. Future traffic control at the intersections of Stone Springs Boulevard and Millstream Drive (Intersection 8) and Stone Springs Boulevard and Tall Cedars Parkway (Intersection 12) requires further clarification and discussion. Both of these intersections currently operate at acceptable LOS during both the AM and PM peak hours under four-way stop control. The Applicant’s updated traffic study indicates that stops signs are proposed to be removed from the side streets at both intersections, resulting in two-way stop control with AM and PM peak hour LOS F conditions on the side streets. The Applicant should provide traffic signal warrant studies for each of these intersections, and agree to install the signals if and when warranted. It is unclear from the draft proffers whether the existing on-site signalization proffer (Proffer II.F.) is proposed to be retained with the subject applications. It is noted that VDOT requested traffic signal warrant studies at both of these intersections during its recent review of the now-approved Healthsouth Rehabilitation Hospital (SPEX 2008-0018) on Millstream Drive, and that the Healthsouth application includes conditions of approval requiring the addition of an eastbound left turn lane on Millstream Drive at Stone Springs Boulevard, as well as a fair-share contribution to a future traffic signal at that location.
12. The Applicant intends to access Landbay 9 via Route 50 at the proposed INOVA Boulevard intersection/median crossover (Intersection 2) to be constructed and signalized as part of the approved INOVA Dulles South Hospital Campus (SPEX 2006-0012). Ultimately, this segment of Route 50 (east of future Route 659 Relocated (Northstar Boulevard)) is planned to be converted to a limited access facility. To this end, the INOVA Hospital SPEX includes a condition of approval requiring that INOVA’s direct access to Route 50 be terminated at such time the Route 50 North Collector Road and Route 659 Relocated (Northstar Boulevard) are constructed and open for public use and provide access to Route 50. As part of this application, OTS recommends a similar commitment from Stone Ridge to terminate direct Route 50 access to Landbay 9 at such time as Route 659 Relocated (Northstar Boulevard) is in place and provides access to Route 50. The Applicant should indicate an alternate means of access to Landbay 9.
13. The Applicant is requested to clarify the intent/status of the text on the plan set indicating “Alternate Private Access Road” from Landbay 9 north to Route 50.

14. OTS appreciates the Applicant's proposed commitment to construct/bond for construction the eastern two lanes of Route 659 Relocated (Northstar Boulevard) between Tall Cedars Parkway and the southern Stone Ridge property line. This is a new commitment beyond the proffers approved with ZMAP 2002-0013. However, given that VDOT will not accept a half section of roadway without a guarantee from the County that the remaining half section will be constructed, OTS requests that the Applicant commit to construct a four-lane divided roadway in a configuration that will accommodate future expansion to a six-lane divided section (as called for in the 2001 Revised CTP).
15. OTS has no objection to the realignment of Millstream Drive as proposed with these applications.

### **Conclusion**

**Subject to resolution of the issues identified above, OTS would not object to the approval of these applications. OTS staff is available to meet with the Applicant and VDOT for further discussion.**

### **ATTACHMENTS**

1. Stone Ridge Land Use Summary (Existing and Proposed Totals) (Traffic Study Table 1)
2. Vicinity Map (Traffic Study Figure 1) and Concept Development Plan
3. Existing (2008) Lane Use and Traffic Control and Peak Hour LOS (Traffic Study Figure 4)
4. Existing (2008) Traffic Volumes (Traffic Study Figure 3)
5. Intersection LOS Summary (Existing, Currently-Approved Program, and Proposed Program Scenarios) (Traffic Study Table 2)
6. Trip Generation Comparison Table (Traffic Study Table 5) and Chart
7. Future (2015) Approved Program Traffic Forecasts (Traffic Study Figure 8)
8. Future (2015) Proposed Program Traffic Forecasts (Traffic Study Figure 9)
9. Future (2015) Approved Program Lane Use and Traffic Control and Peak Hour LOS (Traffic Study Figure 6)
10. Future (2015) Proposed Program Lane Use and Traffic Control and Peak Hour LOS (Traffic Study Figure 7)

cc: Andrew Beacher, Assistant Director, OTS  
John Bassett, Transportation Engineer, VDOT  
Tom Walker, Senior Transportation Engineer, VDOT

Table 1  
Stone Ridge Commercial  
Land Use Summary (1)(2)(3)

Land Use	Existing		Proposed		Total	
	Totals	Units	Totals	Units	Change	Units
Single-Family Detached	853	D.U.	853	D.U.	-	D.U.
Townhouse/Condominium	1,741	D.U.	1,741	D.U.	-	D.U.
Multi-Family	671	D.U.	671	D.U.	-	D.U.
Total Residential	3,265	D.U.	3,265	D.U.	-	D.U.
Retail	316,378	S.F.	316,378	S.F.	-	S.F.
Office (PD-OP/CLI)	282,557	S.F.	398,065	S.F.	115,508	S.F.
Light Industrial (PD-IP)	570,250	S.F.	457,166	S.F.	(113,084)	S.F.
Total Commercial/Employment	1,169,185	S.F.	1,171,609	S.F.	2,424	S.F.

Notes: (1) Total Change based on Concept Development Plan prepared by Urban Engineering, dated December 8, 2008.

(2) Proposed and Existing Totals based on the overall Approved Stone Ridge Development

(3) CLI was assumed as office for purpose of comparison and trip generation analysis.



Figure 1  
Site Location











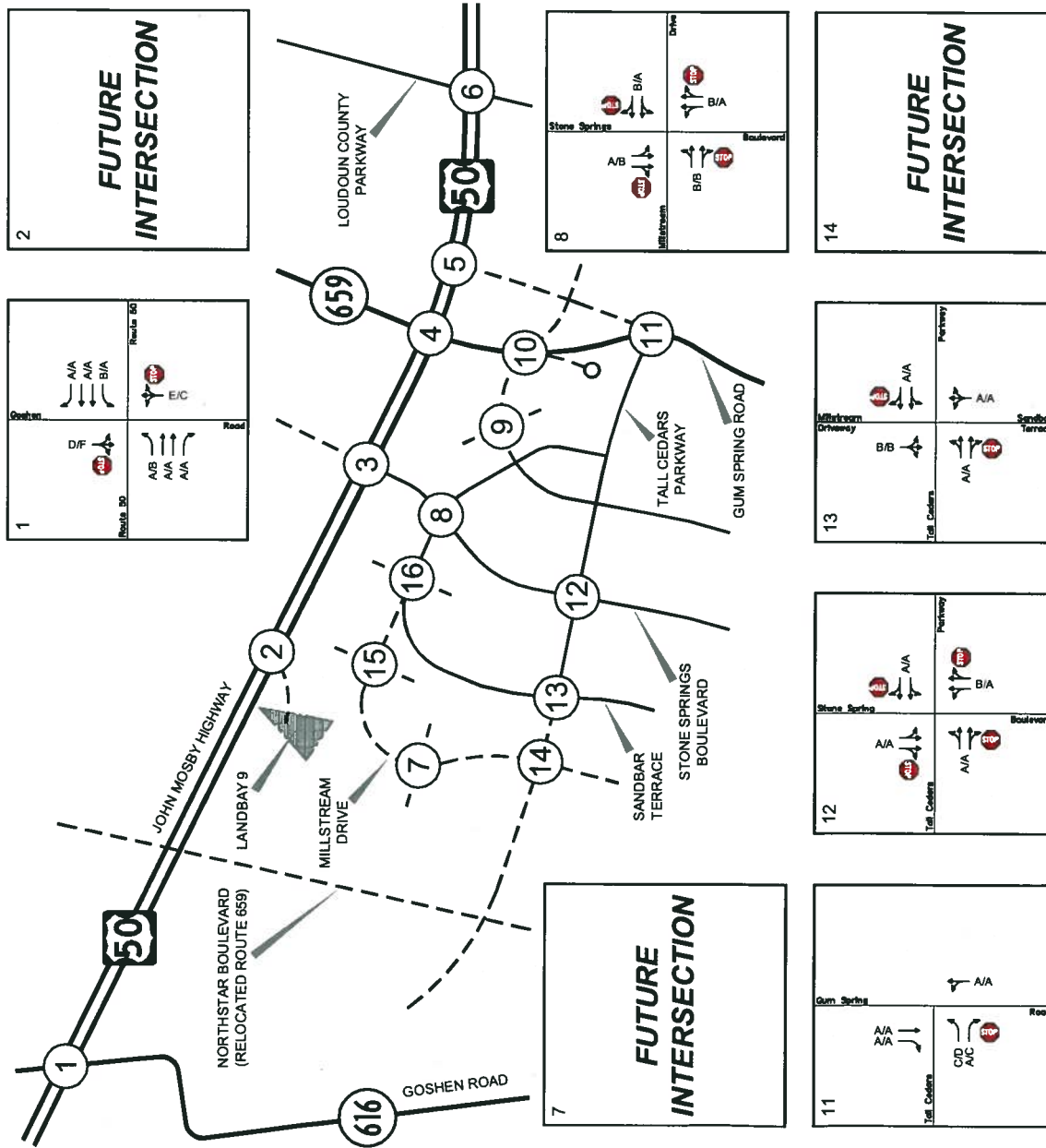


Figure 4  
Existing Lane Use and Traffic Control and  
Peak Hour Levels of Service

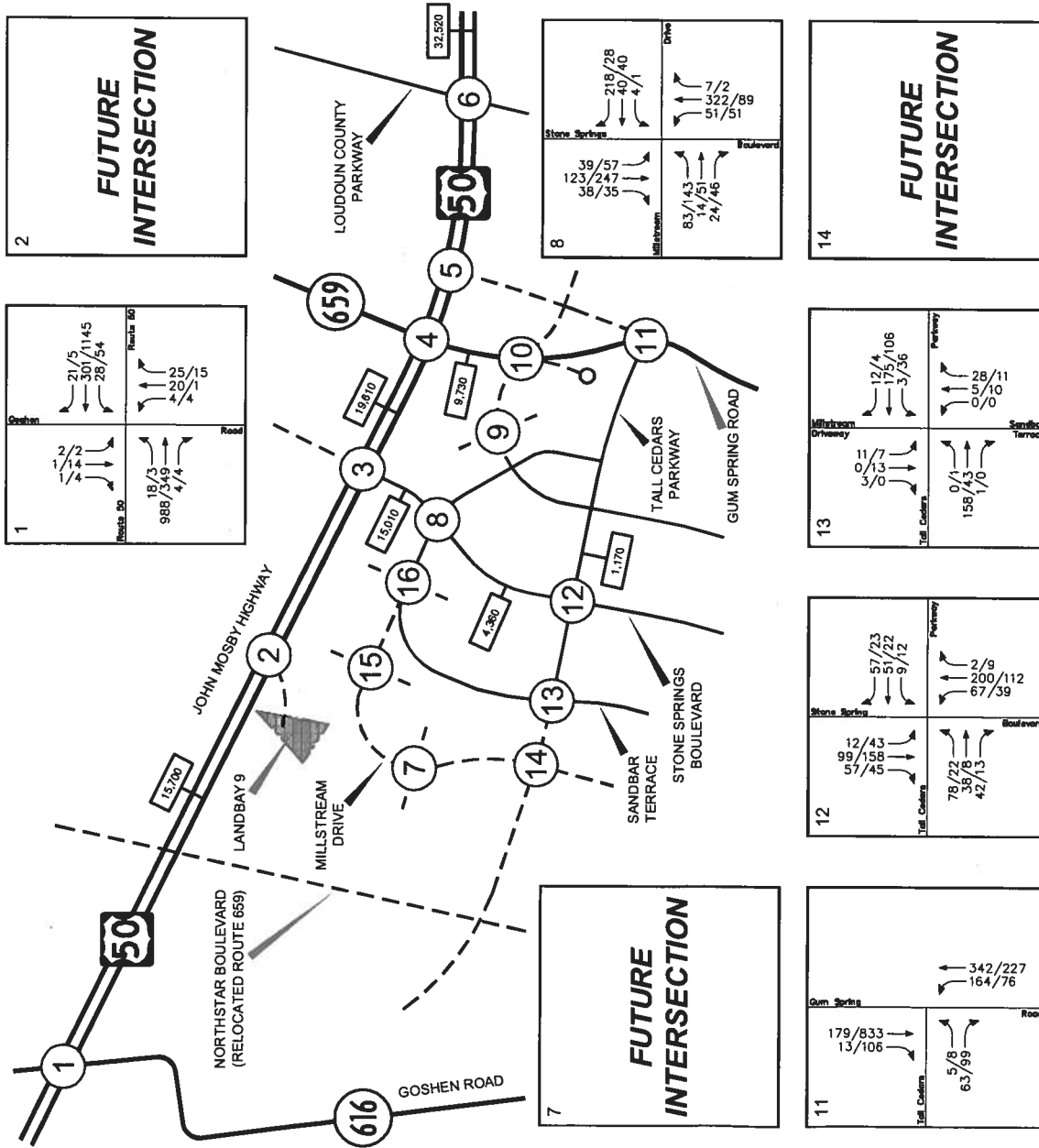


Figure 3  
Existing Peak Hour Traffic Volumes

ADT Average Daily Trips  
PM PEAK HOUR  
000/000



Table 2-1  
Stone Ridge Commercial  
Intersection Level of Service Summary (1) (2) (3)

Intersection	Intersection Control	Critical Movement	2008		2015			
			Existing		Currently Approved Program		Proposed Program	
			AM	PM	AM	PM	AM	PM
(1) U.S. Route 50/ Goshen Road	Stop Sign	EBL WBL NBLTR SBLTR	A [8.1] B [11.0] E [35.2] D [27.8]	B [11.7] A [8.3] C [17.6] F [58.9]	N/A		N/A	
Background Improvement: Install Signal, Add NBR, Optimize Timings (by others)	Signal	EBL EBT EBR WBL WBT WBR NBLT NBR SBLT SBLT Overall	N/A		B (11.2) C (24.6) B (12.3) C (21.2) B (11.3) A (9.2) D (50.0) C (30.1) <u>D (36.4)</u> C (23.4)	B (16.7) B (14.3) B (11.1) A (7.9) B (19.2) A (6.9) D (42.9) C (27.3) <u>D (39.3)</u> B (19.0)	B (11.3) C (25.0) B (12.4) C (21.7) B (11.4) A (9.3) D (50.0) C (30.4) <u>D (36.6)</u> C (23.9)	B (16.8) B (14.2) B (11.0) A (7.9) B (19.2) A (6.8) D (43.0) C (27.4) <u>D (39.4)</u> B (19.0)
(2) U.S. Route 50/ Racefield Ln/ Land Bay 9/NOVA Driveway	Signal	EBL EBT EBR WBL WBT WBR NBLTR SBL SBLT SBS Overall	N/A		A (6.6) B (17.5) C (7.9) B (18.5) A (8.7) A (8.1) D (51.0) D (49.5) D (49.4) <u>D (49.8)</u> B (15.8)	B (18.9) B (15.1) B (10.9) B (12.2) C (23.4) B (12.9) D (47.8) D (50.3) D (50.3) <u>D (50.6)</u> C (24.3)	A (6.6) B (18.0) A (8.0) B (18.4) A (8.8) A (8.2) D (51.1) D (49.5) D (49.6) <u>D (49.6)</u> B (16.1)	C (22.2) B (17.8) B (12.8) B (14.3) C (28.1) B (15.0) D (45.6) D (53.4) D (53.6) <u>D (53.8)</u> C (27.9)
(3) U.S. Route 50/ Stone Spings Blvd	Signal	EBT EBR WBL WBT NBL NBR Overall	B (11.7) A (8.5) F (93.3) A (0.2) F (80.5) E (210.1) E (69.1)	B (10.1) A (9.4) F (92.7) A (0.5) E (64.7) D (42.1) C (27.0)	N/A		N/A	N/A
Background Improvement: Add SB Leg Optimize Timings, Add NB Lanes Add Through Lanes On Rt. 50	Signal	EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SBS Overall	N/A		C (21.9) C (32.5) C (25.4) E (63.2) C (20.6) B (18.8) D (45.4) E (55.2) E (63.7) E (77.3) E (71.0) <u>D (54.3)</u> D (42.6)	E (74.5) D (46.5) D (39.2) E (59.6) D (48.6) C (26.7) E (62.7) E (56.4) D (47.2) E (70.1) E (79.1) <u>D (51.5)</u> D (53.6)	C (20.5) C (30.5) C (24.1) E (62.4) C (20.5) B (18.6) D (47.5) E (57.1) E (61.2) E (77.3) E (77.6) <u>D (54.6)</u> D (41.5)	E (75.4) D (45.7) D (38.6) E (59.2) D (48.6) C (28.7) E (65.9) E (57.1) D (46.8) E (70.1) E (79.8) <u>D (51.5)</u> D (53.7)
(4) U.S. Route 50/ Gum Spring Rd (VA 659)	Signal	EBL EBT EBR WBL WBT WBR NBLTR SBLTR Overall	B (12.0) C (29.8) B (13.3) E (57.0) C (22.6) C (20.8) F (247.4) E (78.2) E (58.7)	D (42.8) E (74.8) E (71.7) C (24.5) C (31.4) B (11.2) F (130.1) E (108.5) D (54.0)	N/A		N/A	
Background Improvement: Remove Signal Remove NB Leg, RUO Only (by others)	Stop Sign	SBR	N/A		B (10.2)	A [9.8]	B [10.4]	A [9.7]
(5) U.S. Route 50/ West Spine Road	Signal	EBT EBR WBL WBT NBL NBR Overall	N/A		E (56.6) A (9.1) D (52.3) A (8.5) D (54.1) <u>D (38.4)</u> D (40.6)	E (72.0) C (22.8) D (52.3) A (9.6) E (64.9) <u>C (20.2)</u> D (37.1)	E (62.2) A (9.9) E (55.7) A (8.3) D (54.1) <u>D (39.0)</u> D (44.0)	E (59.8) C (22.9) E (57.3) A (9.4) E (64.9) <u>C (28.9)</u> D (35.7)
(6) U.S. Route 50/ Loudoun County Pkwy (Old Ox Road)	Signal	EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SBS Overall	D (54.4) C (32.8) C (22.9) E (45.8) D (46.9) F (18.6) E (45.8) E (62.3) D (45.4) F (528.2) D (41.9) <u>D (40.8)</u> F (110.7)	C (30.0) C (25.8) F (102.0) F (80.7) E (58.7) F (87.3) E (64.1) D (41.7) D (40.0) C (30.9) D (47.6) E (74.8) E (59.3)	F (181.5) D (38.1) C (27.0) F (85.9) E (68.8) F (296.8) F (87.4) F (279.1) F (82.9) F (342.7) D (46.2) D (49.2) F (152.9)	F (342.9) D (41.9) C (32.1) E (68.5) E (61.8) F (284.2) E (66.2) E (78.6) D (54.2) F (86.4) F (209.8) E (254.6) F (243.3)	F (181.9) D (38.2) C (27.0) F (85.9) E (69.6) F (284.8) F (87.4) F (279.1) F (82.9) F (342.7) D (46.2) D (50.2) F (153.8)	F (346.4) D (42.1) C (32.1) E (68.5) E (61.8) F (284.2) E (66.2) E (78.6) D (54.2) F (86.4) F (209.8) E (254.6) F (243.4)
(7) Millstream Dr/ Land Bay 7 Driveway	Stop Sign	EBLR WBLR NBLT SBLT	N/A		B [10.3] N/A A [7.2] N/A	B [11.5] N/A A [4.6] N/A	N/A A [9.9] N/A A [7.5]	N/A B [10.4] N/A A [6.3]

Notes: (1) Analyses based on Synchro 7.  
(2) Numbers in parentheses indicate average delay in seconds per vehicle for signalized intersections.  
(3) Numbers in brackets indicate average delay in seconds per vehicle for stop sign controlled intersections.

Table 2-2  
Stone Ridge Commercial  
Intersection Level of Service Summary (1) (2) (3)

Intersection	Intersection Control	Critical Movement	2008		2015			
			Existing		Currently Approved Program		Proposed Program	
			AM	PM	AM	PM	AM	PM
(8) Stone Springs Blvd/ Millstream Drive	Stop Sign 4-way	EBTL EBTR WBTL WBTR NBTL NBTR SBTL SBTR	B [10.7] A [8.3] A [8.7] B [11.9] B [12.2] B [10.6] A [10.0] A [9.3]	B [11.5] A [8.2] A [8.4] A [8.3] A [9.5] A [8.3] B [10.6] A [9.5]	N/A		N/A	
Background Improvement: Open existing turn lanes on Stone Springs, convert to two-way stop	Stop Sign 2-way	EBTLR WBTLR NBL SBL	N/A		F [7] F [456.6] A [8.9] B [10.8]	F [7] F [7] B [10.3] A [8.5]	F [7] F [7] A [8.7] B [10.9]	F [7] F [7] B [10.3] A [8.4]
(9) South Point Dr/ Site Office/Residential	Stop Sign	EBLTRA WBLTRA NBLTRA SBLTRA	N/A		B [10.7] N/A A [7.9] A [0.0]	A [9.7] N/A A [6.7] A [0.0]	A [6.4] A [0.2] B [15.0] A [9.8]	A [3.1] A [2.0] B [13.9] B [10.4]
(10) Gum Spring Rd/ South Point Dr.	Stop Sign	EBT WBT	N/A		N/A		A [0.0] A [0.0]	A [0.0] A [0.0]
(11) Gum Spring Rd/West Spine Road/ Tall Cedars Pkwy	Stop Sign	EBL EBR NBLT	C [19.6] A [9.7] A [3.6]	D [31.3] C [21.6] A [4.1]	N/A		N/A	N/A
Background Improvement: Install Signal Realign with West Spine Road Add NB/SB Through Lane	Signal	EBL EBR NBLT SBLT SBB Overall	N/A		C (20.5) B (19.0) B (14.0) A (4.9) A (1.4) B (12.8)	C (26.2) F (92.0) C (34.1) B (17.9) A (1.4) C (32.9)	C (20.8) B (19.7) B (13.5) A (4.7) A (1.4) B (12.4)	C (25.8) F (95.5) C (34.6) B (18.0) A (1.4) C (33.8)
(12) Stone Springs Blvd/ Tall Cedars Pkwy	Stop Sign 4-way	EBLT EBTR WBLT WBTR NBLT NBTR SBLT SBTR	A [9.6] A [7.9] A [8.4] A [8.2] B [10.1] A [8.6] A [8.4] A [8.3]	A [8.2] A [7.1] A [8.0] A [7.3] A [8.0] A [7.3] A [8.2] A [7.6]	N/A		N/A	
Background Improvement: Open existing turn lanes on Tall Cedars, convert to two-way stop	Stop Sign 2-way	EBL WBL NBLTR SBLTR	N/A		A [8.4] A [7.9] F [421.0] F [7]	A [7.8] A [7.8] F [7] F [7]	A [8.4] A [7.9] F [370.9] F [7]	A [7.8] A [7.8] F [7] F [7]
(13) Tall Cedars Pkwy/ Millstream Drive/Sandbar Terrace	Stop Sign	EBL WBL NBLTR SBLTR	A [0.0] A [0.3] A [9.4] B [10.9]	A [0.3] A [3.1] A [9.6] B [10.8]	A [0.9] A [0.5] C [16.2] C [18.7]	A [7.7] A [7.5] B [10.7] C [15.0]	A [8.2] A [7.9] C [15.7] C [17.8]	A [7.7] A [7.7] B [10.8] B [13.8]
(14) Tall Cedars Pkwy/ Millstream Extended	Stop Sign	WBL NBLTR SBLTR	N/A		N/A		A [7.6] B [10.1] B [12.1]	A [7.3] A [9.3] B [10.9]
(15) Millstream Extended/ Industrial Drive A	Stop Sign	EBLTRA WBLTRA NBLTRA SBLTRA	N/A		N/A		A [0.5] A [0.1] A [8.4] A [9.5]	A [0.4] A [1.4] A [9.0] A [9.8]
(16) Millstream Extended/ Industrial Drive B	Stop Sign	EBLTRA WBLTRA NBLTRA SBLTRA	N/A		N/A		A [0.0] A [0.1] A [8.5] A [9.8]	A [0.0] A [1.8] A [8.9] B [10.4]

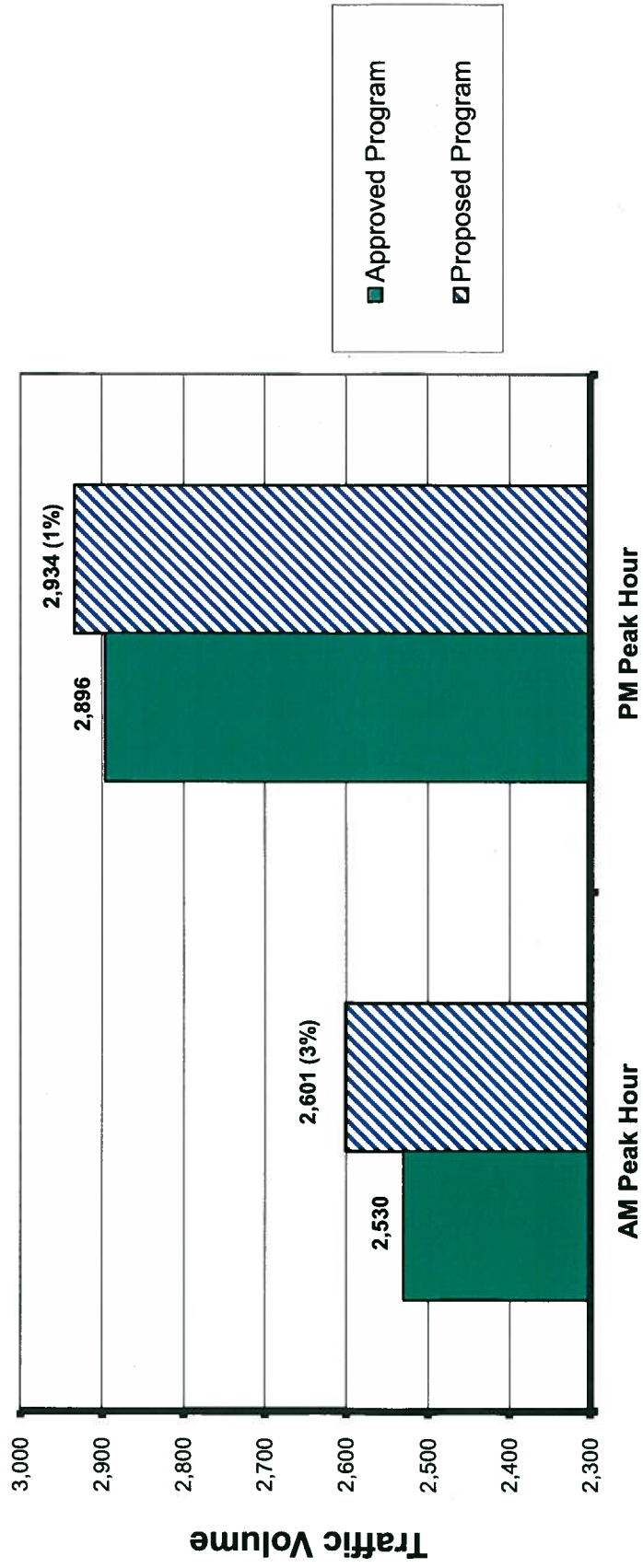
Notes: (1) Analyses based on Synchro 7.  
(2) Numbers in parentheses indicate average delay in seconds per vehicle for signalized intersections.  
(3) Numbers in brackets indicate average delay in seconds per vehicle for stop sign controlled intersections.

Table 5  
Stone Ridge Commercial  
Trip Generation Comparison

Program	AM Peak Hour			PM Peak Hour			Average Daily Traffic
	In	Out	Total	In	Out	Total	
Approved Program	1,231	1,299	2,530	1,404	1,492	2,896	39,327
Proposed Program	1,296	1,305	2,601	1,408	1,526	2,934	39,658
Difference	66	6	71	4	34	38	331
Percentage	5%	0%	3%	0%	2%	1%	1%

Notes: (1) Trip generation based on Institute of Transportation Engineers Trip Generation, 7th Edition.

## Stone Ridge Commercial Trip Generation Comparison



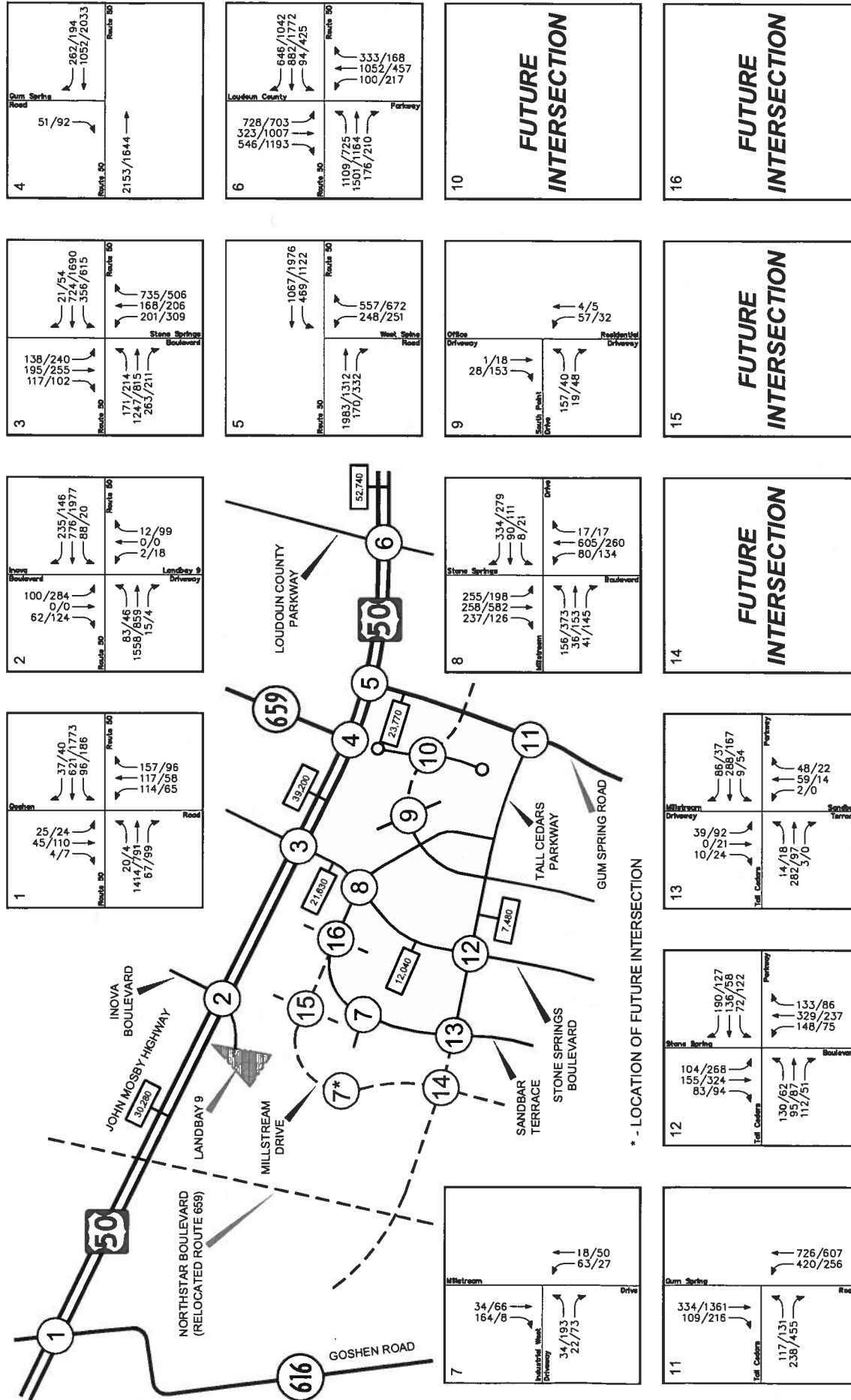


Figure 8  
2015 Future Approved Traffic Forecasts

ADT Average Daily Trips

PM PEAK HOUR  
AM PEAK HOUR  
North



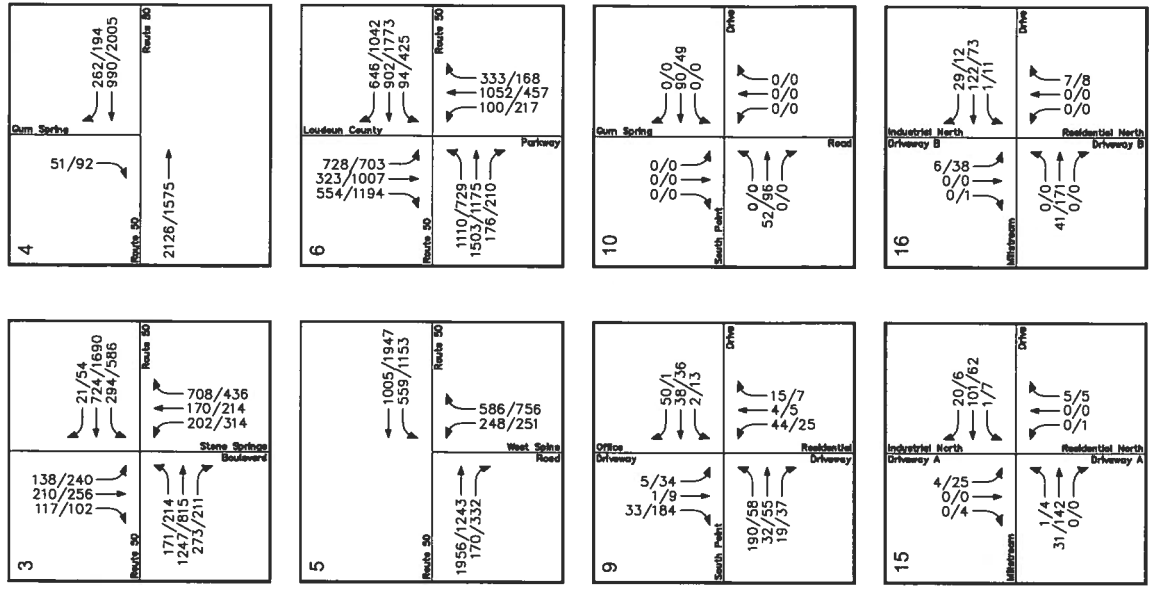
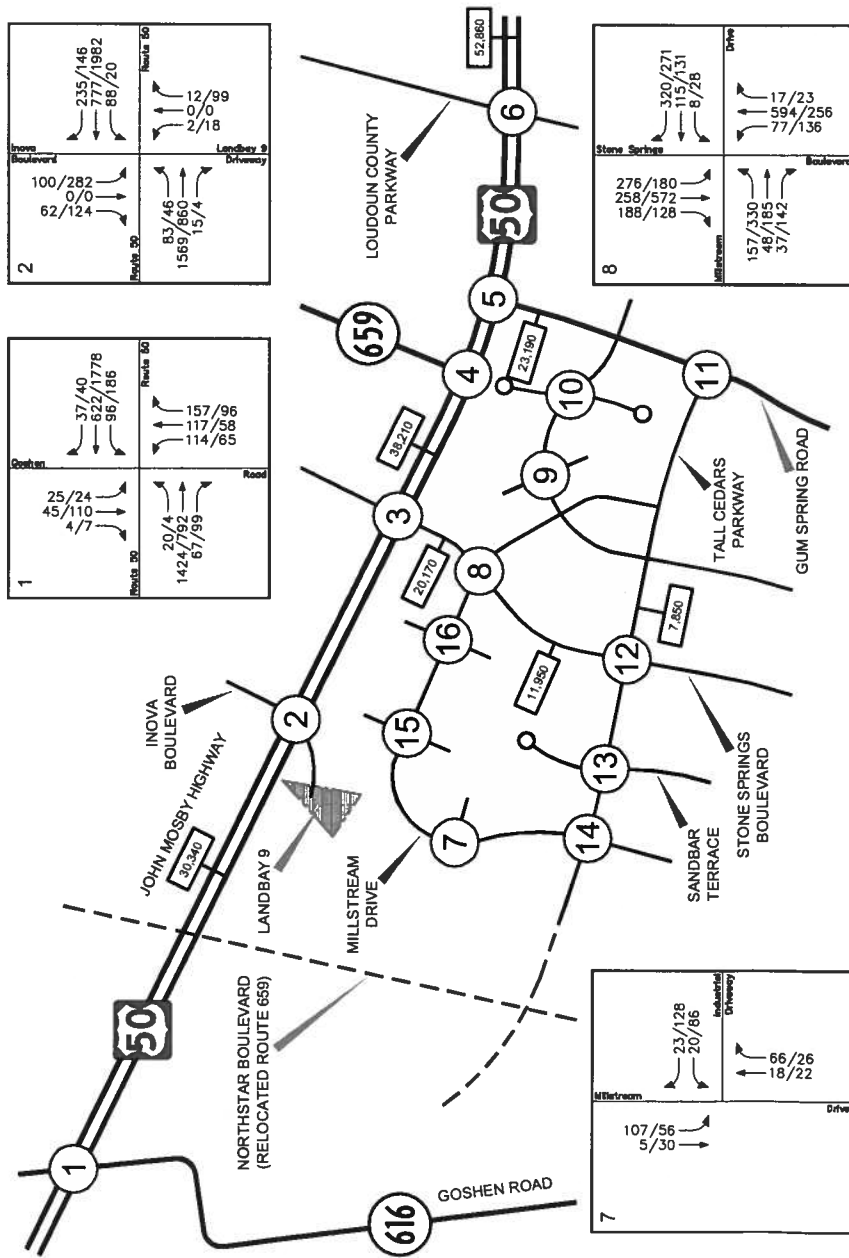


Figure 9  
2015 Future Proposed Traffic Forecasts

ADT Average Daily Trips

PM PEAK HOUR  
000/000  
North

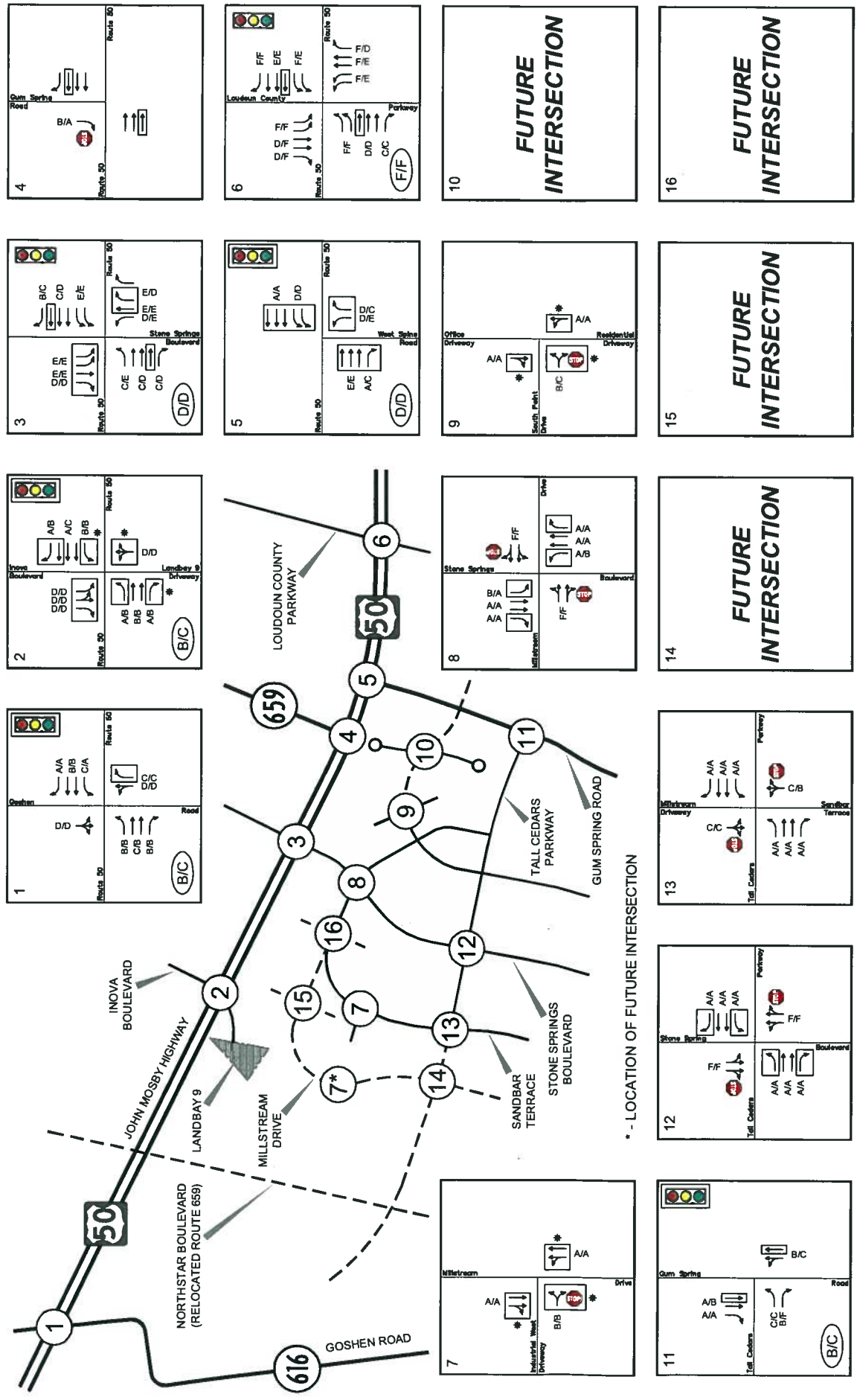


Figure 6  
Future Approved Lane Use and Traffic Control and  
Peak Hour Levels of Service

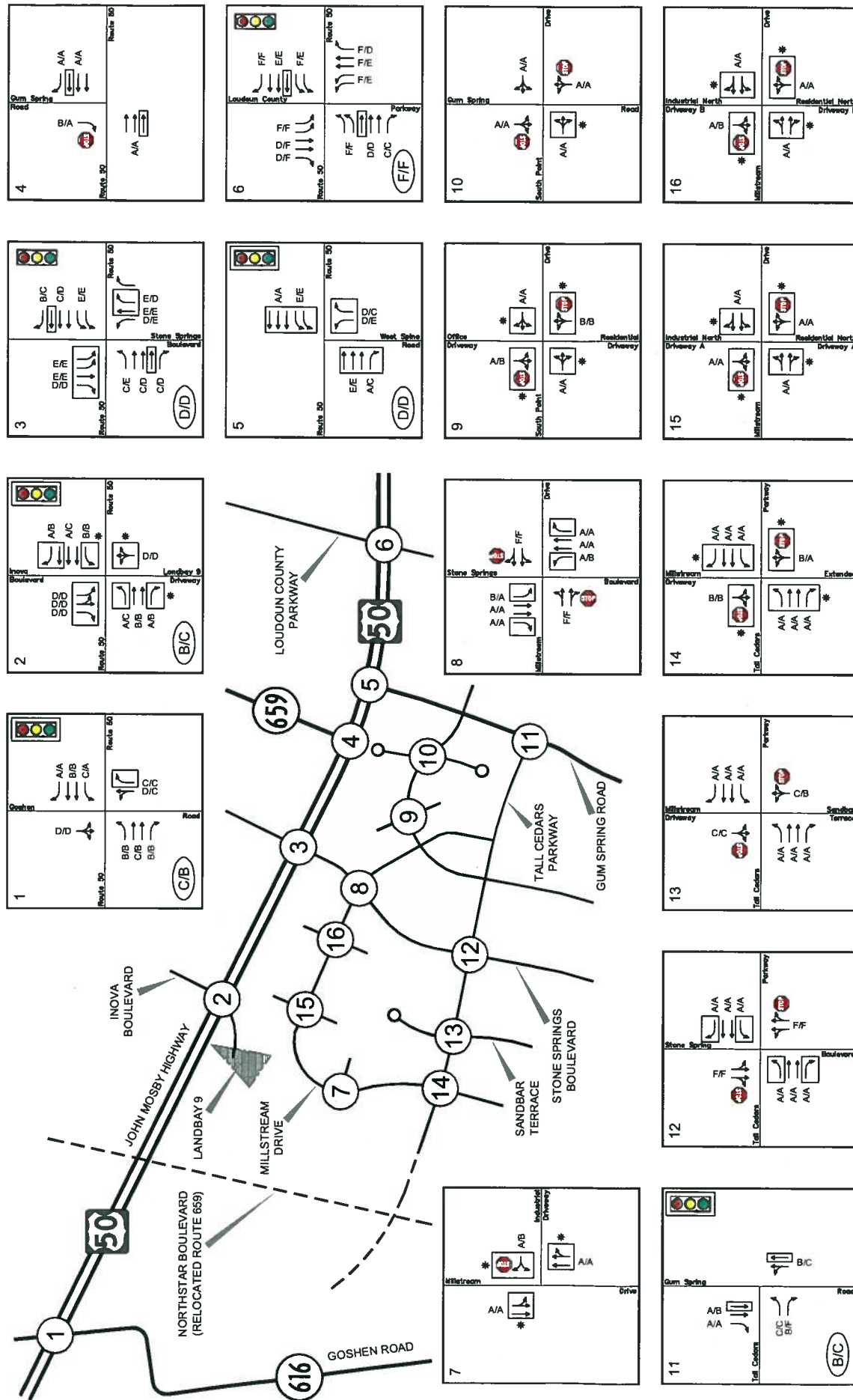


Figure 7  
Future Proposed Lane Use and Traffic Control and  
Peak Hour Levels of Service